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RELATIONSHIP BETWEEN SENSATION SEEKING AND ACADEMIC ACHIEVEMENT, SCHOOL ATTENDANCE, ACADEMIC ABILITY, AND ALCOHOL USE

by

© RICHARD E. ANDERSON

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

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UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "Relationship Between Sensation Seeking and Academic Achievement, School Attendance, Academic Ability, and Alcohol Use" submitted by Richard E. Anderson in partial fulfilment of the requirements for the degree of Master of Education in Counseling Psychology.

Peter Calder
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Date June 15, 1973

ABSTRACT

The purpose of this investigation was to examine the relationship between the personality dimension of sensation seeking and academic achievement, school attendance, academic ability, and alcohol use in Grade twelve students.

The Sensation Seeking Scale (SSS), Form IV, was administered to three hundred and eight Grade twelve students in an Edmonton Composite High School. In relation to their scores, three subgroups were identified for each of the five scales of the SSS; high sensation seekers, moderate sensation seekers, and low sensation seekers.

Information regarding academic achievement and school attendance was provided by the 1972-73 school progress reports, while School and College Ability Test scores provided an indication of the academic ability of each subject. Information regarding alcohol use for each subject was obtained from responses to the Student Alcohol Use Questionnaire, which was constructed by the writer.

It was hypothesized that no significant differences would be found to exist among the high, moderate, and low sensation seekers, for each scale of the SSS, in academic achievement, school attendance, academic ability and alcohol use.

Using analysis of variance, it was found that only the

subgroups defined by the Disinhibition scale of the SSS differed significantly in academic achievement, while significant differences were found among the subgroups, defined by the Experience Seeking scale of the SSS, in school attendance. The subgroups defined by the Boredom Susceptibility scale and the General scale of the SSS differed significantly in academic ability.

Using Chi square techniques, significant differences were found among the three subgroups, for all scales of the SSS, in reported alcohol use.

Significant results of this study involving the five scales of the SSS, indicate that the higher the degree of sensation seeking, the greater the tendency for lower academic achievement, poorer school attendance, higher academic ability, and to indicate involvement with various patterns of alcohol use.

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CHAPTER I

INTRODUCTION

There appears to be almost universal acceptance by educators that individual personality differences among students must be taken into account in attempting to understand various student behaviors and attitudes and in planning educational programs. This investigation concentrates on the personality dimension of sensation seeking and its relationship to academic achievement, school attendance, academic ability, and alcohol use.

Knish and Busse (1968) indicated that individual differences existed in the range of stimulation which individuals find to be optimal, some individuals preferring peace and quiet while others seem uncomfortable unless constantly immersed in noisy activity. To the degree that an individual's preferred stimulation level has some long-range stability, the individual optimal level should constitute a meaningful descriptive personality trait which could account for various student attitudes, behaviors and attributes.

One attempt to measure an individual's optimal level of stimulation is that of Zuckerman, Kolin, Price and Zoob (1964), involving the Sensation Seeking Scale (SSS). The

SSS was originally developed to provide a quantitative trait for optimal level of stimulation in order to predict individual differences in response to sensory deprivation. Although volunteers for sensory deprivation experiments tend to score high on the SSS (Zuckerman, Schultz, and Hopkins, 1967), the SSS has not been very predictive of actual reactions to sensory deprivation.

Since the development of the SSS, numerous studies have shown it to have a reasonable degree of validity which has aroused an interest in further establishing stimulus seeking as a personality dimension. Knish and Donnenwerth (1972) indicate the high sensation seeker is likely; (a) to be field independent (Zuckerman et al., 1964; Zuckerman and Link 1968); (b) to be better educated, show average or better-than-average intelligence, and be younger than the low stimulus seeker, (Blackburn, 1969; Knish and Busse, 1968); (c) not to show overt psychopathology (Blackburn, 1969; Knish and Busse, 1969); (d) to be interested in scientific occupations or those occupations which are unstructured, which have changing demands and require a problem-solving approach (Knish and Donnenwerth, 1969); (e) to need change in his environment, independence from others, and to be exhibitionistic (Zuckerman and Link, 1968); (f) to be unconventional, noncomformist, and to not value order and routine (Knish and Donnenwerth, 1969; Zuckerman and Link, 1968); (g) to volunteer for esoteric psychological experiments (Zuckerman, Schultz, and Hopkins, 1967); and

(h) to be impulsive, active, and outgoing (Blackburn, 1969; Knish and Busse, 1969; Zuckerman and Link, 1968).

Several attitudes, behaviours, and attributes of high school students which are of interest and concern to educators appear related to sensation seeking. These are introduced here but are elaborated on in Chapter II.

Student Alcohol Use

It was felt by the writer that the reduction of the legal age for alcohol consumption by the Government of Alberta in 1970 seemingly increased the importance of alcohol in the lives of many high school students. Alcohol became more readily available and regular drinking patterns became more acceptable for a large number of students.

The findings of the extensive Edmonton Public School Board Drug Survey (1971) brought to light factors of student alcohol use which in some cases were suspected, but which had not been substantiated. For example, it reported that the use of alcohol steadily increased among students in grades seven to twelve from 50 to 85 percent. It also indicated that 56 percent of the male grade twelve students and 35.9 percent of the female grade twelve students reported drinking once a week or more. Principals and teachers ranked the 'alcohol problem' as being more important than the 'drug problem' for students. As well, people regarded as community opinion leaders were surveyed and unanimously agreed that alcohol was a greater problem than other drugs and

about one-half of those interviewed indicated they felt the alcohol problem was not being taken seriously enough.

Academic Ability and Achievement

During the past twenty years there has been an ever-increasing body of research that indicates that academic achievement is dependent upon something more than academic ability. It has been shown (SCAT manual) that the difference between two students of equal ability, with one achieving and the other failing to achieve, is due, at least in part to personality characteristics.

Several instruments which were designed to assess individual personality characteristics have been used to suggest specific personality characteristics which distinguish between academically successful and unsuccessful students. Some of these instruments have also been related to sensation seeking. As well, several studies have specifically related sensation seeking to both academic ability and the personality characteristics which have been identified with academic achievement.

School Attendance

Principals and teachers have ranked school attendance as the number one problem among high school students (Edmonton Public School Board Drug Survey, 1971). Several high schools presently operate on a semester system where the school term is divided into two sections with courses

starting and being completed in each section. In a semester system regular attendance is extremely important because of the amount of work covered in each longer class period. The onus for regular attendance in senior high schools is placed upon the pupil and his parents once the compulsory school age (16) is exceeded. However, high schools usually employ a variety of techniques to encourage regular attendance. For example, it is indicated in the Edmonton Public School Board Principal's Handbook (Interim Edition 1971-72):

> "The principal and staff are responsible for developing school procedures to encourage regular attendance."

As a result, in most high schools in Edmonton, continued registration in all courses is dependent upon regular attendance.

STATEMENT AND IMPORTANCE OF THE PROBLEM

The purpose of this investigation was to study the relationship between sensation seeking and specific high school student attitudes, behaviors, and attributes. In relation to their scores on the SSS, three subgroups of students were identified; high sensation seekers (HSS), moderate sensation seekers (MSS), and low sensation seekers (LSS). Evidence was collected to compare HSS students, MSS students, and LSS students in:

(1) Academic achievement.

(2) School Attendance.

(3) Academic ability.

(4) Alcohol Use.

The author feels that this study provides additional information for educators so that they might further understand important and current aspects of high school student lives. Further understanding of relevant student personality characteristics is essential in attempting to establish much needed alcohol and other drug education programs, as well as in providing a clearer picture of the problems associated with the achievement and attendance of high school students.

The study also provides additional information relative to the construct validity of the SSS by exploring the role of stimulus seeking in student attitudes, behaviors and attributes.

LIMITATIONS

A. This study was concerned only with students registered in a grade twelve program at Strathcona Composite High School in Edmonton, Alberta, and therefore, care should be taken in generalizing results of this research to the general population without careful re-examination.

B. Information regarding student alcohol use was obtained by a self-report questionnaire, responses to which may have been affected by such things as social desirability and doubts of confidentiality, as students were asked to identify themselves with their responses.

C. School attendance involves both classes 'skipped' and

classes missed for legitimate reasons, such as illness and personal or family problems. It would appear that sensation seeking relates only to school attendance involving classes 'skipped'.

D. Care must be taken in considering the results of the Disinhibition scale of the SSS, as this scale was modified by the writer in order to make it acceptable for use in a high school setting.

DEFINITIONS

A. Sensation seeking - is the need for change, variety, and intensity of stimulation which is measured by the Sensation Seeking Scale (SSS).

B. Academic ability - is that which is measured by the School and College Ability Test (SCAT) which was administered to grade nine students by the Government of Alberta, Department of Education.

C. Academic achievement - refers to the mean of all teacher grades obtained in the first semester of the 1972-73 school term.

D. School attendance - is operationally defined as the total number of classes absent divided by the total number of courses taken in the first semester of the 1972-73 school term.

CHAPTER II

RELATED RESEARCH AND LITERATURE

Introduction

Since its construction in 1964, the Sensation Seeking Scale (SSS) has been used in a number of research studies. There are implications in each of the studies regarding both the validity of the instrument and the relation of the personality dimension of sensation seeking to several diverse attitudes, behaviors and attributes. This chapter will focus on those studies which relate to the four areas being investigated here: alcohol use, academic achievement, academic ability, and school attendance.

Sensation Seeking and Student Alcohol Use

Schubert (1964) indicated that the use of central nervous system stimulants of any kind may be related to a trait of 'arousal seeking'. Although alcohol is physiologically a central nervous system depressant, the effects of alcohol are described as getting 'high' with the highness referring to the disinhibition and feelings of well being which often accompany the initial lowering of inhibition after drinking.

Using Zuckerman's SSS with college undergraduate stu-

dents, Segal and Rose (1972) found a significant and positive relationship between sensation seeking and both drinking for 'pleasure seeking' and drinking to 'feel good'. They also found a tendency for high sensation seekers to drink to overcome difficulty and bad moods and therefore hypothesized that high sensation seekers may not like to feel 'down' and may drink to offset this feeling. In addition, they found that without exception those who were high sensation seekers not only indicated a preference for drinking, but also demonstrated abusive drinking patterns. Their drinking styles, for example, were characterized by morning drinking, solitary drinking and excessive drinking. A significant correlation was also found in drinking interfering with preparation for class for high sensation seekers.

Zuckerman, Neary and Brustman (1970) found that both males and females who reported drinking alcohol scored significantly higher on the SSS than those who reported little or no drinking. More recently, Zuckerman (1971) reported that interest in using alcohol is primarily correlated with the Disinhibition scale of the SSS. The Disinhibition scale might be labelled the 'swinger' scale as it contains items which express the loss of social inhibitions.

Sensation Seeking and Academic Ability

Knish and Busse (1968) found, in a sample of hospitalized alcoholics, a significant positive correlation between the SSS and the General Learning Ability Scale of the General

Aptitude Test Battery (GATB). They also found significant positive correlations between the SSS and the Numerical Aptitude, Spatial Ability, and Form Perception Scales of the GATB. The correlations with the following scales of the GATB were positive but not significant: Manual Dexterity, Verbal Ability, Clerical Perception, Motor Coordination, and Finger Dexterity.

Zuckerman (1972) reported that Pemberton correlated Form IV of the SSS with Scholastic Aptitude Test (SAT) totals in two hundred male college freshman, and two hundred female college freshman. The General SSS correlated low but significantly with the SAT. However, the correlations with the factor scales of the SSS varied. In males only, the Experience Seeking and Boredom Susceptibility Scales of the SSS correlated significantly with the SAT. In females the significant correlation with the SAT was positive for the Thrill and Adventure Seeking Scale but negative for the Disinhibition Scale of the SSS.

Knish and Donnenwerth (1972) report significant correlations in male undergraduates between scales of the American College Test (ACT) a measure of academic aptitude, and the SSS. The correlations were insignificant for female undergraduates. Blackburn (1969) found an insignificant correlation between the SSS and the Wechsler Adult Intelligence Scale (WAIS) I.Q. in a sample of psychiatric offenders. Knish (1970, reported by Zuckerman, 1972) found significant correlations between the General SSS and the composite score

of the Iowa Test of Basic Skills. He also found the SSS correlated significantly with the Problem Solving subtest but not with the Arithmetic Concept subtest.

Sensation Seeking and Academic Achievement

Two types of studies appear to give some indication of the relation of sensation seeking to academic achievement. Firstly, there are studies which have actually correlated the SSS with academic achievement. Secondly, other studies have shown a relation between the SSS and various personality characteristics which have also been shown to relate to academic achievement.

Zuckerman (1972) reported that Pemberton had found the Disinhibition Scale of the SSS correlated significantly and negatively with the first semester's grade point index (GPI) for both males and females. The Experience Seeking Scale of the SSS correlated significantly and negatively with GPI in males only. The correlations with the other scales of the SSS were insignificant. Knish and Donnenwerth (1972) found that the SSS correlated significantly and negatively with grade point average of freshman males and significantly and positively for freshman females.

Zuckerman and Link (1968) found that the SSS negatively correlated with the Order Scale and positively correlated with the Change Scale of the Edwards Personal Preference Schedule (EPPS). These scales have also been shown to relate to what many investigators describe as overachievement and

underachievement, referring to an individual's expected level of achievement in relation to his ability. Krug and Deisner (1960) both found that overachievers scored higher than underachievers on the 'Order' Scale of the EPPS. The EPPS manual describes the 'Order' scale as:

> "To have written work neat and organized, to make plans before starting on a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip, to organize details of work, to keep letters and files according to some system, to have meals organized and a definite time for eating, to have things arranged so that they run smoothly without change."

Coleman (1950) found that overachievers scored lower than underachievers on the 'Change' Scale of the EPPS which measures conformity. The EPPS manual describes the 'Change' scale as,

> "To do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions."

Frankel (1960) also found that overachievers are more willing than underachievers to conform, especially in school matters.

Zuckerman and Link (1968) found that the SSS correlated significantly with the Hypomania Scale of the MMPI. This scale measures overproductivity in thought and action. Atlus (1948), using the MMPI, found that underachievers were different from overachievers on only one scale - Hypomania. Vaughan (1967) also found that underachievers scored significantly higher on the Hypomania Scale of the MMPI as well

as two other scales; the Psychopathic Deviate Scale and the Ego-Strength Scale.

Farley and Farley (1967 and 1970) and Zuckerman (1972) have found significant and positive relations between the SSS and extroversion using the Extroversion-Introversion subscale of the Eysenck Personality Inventory (EPI). Patsula (1968), using the EPI found a significant positive relation between introversion and aggregate academic achievement in high school students. Also using the EPI, Goedicke (1968) found that extroversion was significantly and negatively related to academic success in various grade ten subject areas.

Sensation Seeking and School Attendance

Although it appears that there have not been any studies comparing sensation seeking to school attendance, the author feels there is evidence for a negative correlation. Various personality characteristics which have been shown to relate to sensation seeking appear to be related to school attendance. Zuckerman and Link (1968) describe the high sensation seeker as unconventional, low in social values or conformity, not valuing order and routine, impulsive and unstable. They also reported that in male subjects, the SSS correlated negatively with the Deference Scale of the Edwards Personal Preference Schedule and therefore that they have a generalized challenging or skeptical attitude toward authority.

CHAPTER III

PROCEDURE AND DESIGN

Introduction

The present study was concerned with determining the relation between the personality dimension of sensation seeking and four specific grade twelve student variables. The degree of sensation seeking, as defined by five scales of the Sensation Seeking Scale (SSS), determined the subgroups which were then compared in academic achievement, school attendance, academic ability, and alcohol use.

INSTRUMENTS

The Sensation Seeking Scale (SSS), Form IV

1. Development

The SSS has had a lengthy development involving four major revisions. Form I of the SSS consisted of fifty forced-choice items designed primarily to identify a "General Trait" measure of individual differences in the hypothesized trait "Optimal Level of Stimulation". Through factor analysis a General SSS MF scale consisting of twenty-two items was constituted. Form II of the SSS (Zuckerman, Kolin, Price, and Zoob, 1964) consisted of thirty-four items including twenty-

two items in the General SSS MF scale. Form III was an experimental form consisting of the original fifty items in Form I plus sixty-three new items.

Form IV of the SSS (Zuckerman, 1971) is a seventy-two item forced-choice scale. Each of the seventy-two items describes a stimulating and less-stimulating activity and the SSS score consists of the sum of choices of the more stimulating activity of the pair (Appendix B). Form IV includes the General Scale from Form II as well as four additional scales identified from Form III by factor analysis. These were labelled as Thrill and Adventure Seeking, Experience Seeking, Disinhibition and Boredom Susceptibility.

The Thrill and Adventure Seeking factor (TAS) consists of items which express a desire to engage in outdoor sports or other activities involving elements of speed or danger.

The Experience Seeking factor (ES) consists of items indicating wanderlust, exhibitionism in dress and behavior, the use of marijuana and hallucinatory drugs, associating with unusual and unconventional persons, a liking of modern, arousing music and art, and a "flouting of irrational" authority. The essence of this factor is "experience for its own sake" and might be termed a "hippie" factor.

The Disinhibition factor (DIS) consists of items which express the hedonistic "Playboy Philosophy"; heavy social drinking, variety in sexual partners, wild parties, and gambling.

The Boredom Susceptibility factor (BS) in males con-

sists of items indicating a dislike to repetition of experience, routine work, predictable, dull or boring people, a preference for exciting people and variety, and a restlessness when things are unchanging.

2. Reliability

Zuckerman (1972) reports split-half (odd-even) reliabilities for the General, Thrill and Adventure Seeking, Experience Seeking, Disinhibition, and Boredom Susceptibility scales of the SSS, Form IV, ranging from .58 to .88.

Factor reliability involving correlation of item loadings (males vs. females), is reported by Zuckerman (1972), ranging from .75 to .95 for all scales of the SSS except the Boredom Susceptibility scale which was .37.

Zuckerman (1972) also reports satisfactory retest (one week interval) reliabilities for all scales of the SSS ranging from .82 to .94.

3. Age Differences

Zuckerman (1969) indicates in Postulate IIIB of the Optimal Level of Stimulation Theory that the trait of sensation seeking increases with age until some time in adolescence and then falls with increasing age. More recently (1972) he indicated the SSS would not be appropriate below the high school level. He also proposed that there is little change during adolescence in sensation seeking.

4. Modification of the SSS, Form IV

In order that permission be given for the SSS to be used in the Edmonton Public School System, five items were omitted from the original questionnaire. The Research and Development Department of the Edmonton Public School Board indicated that in their opinion, the following five items could be offensive to students or parents and should therefore be omitted.

26. A. In a good sexual relationship people never get bored with each other.

B. Its normal to get bored after a time with the same sexual partner.

30. A. Most adultery happens because of sheer boredom.

B. Adultery is almost always the sign of a sick marriage.

38. A. I would like to meet some people who are homosexual (Men or Women).

B. I stay away from anyone I suspect of being 'queer'.

59. A. A person should have considerable sexual experience before marriage.

B. Its better if two married persons begin their sexual experience with each other.

64. A. There is altogether too much portrayal of sex in movies.

B. I enjoy watching many of the 'sexy' scenes in movies.

It was felt by the writer, after personal communication with the author of the SSS, that this modification would have little effect on the results of this investigation involving all scales of the SSS except the Dis scale. However, care should be taken in interpreting results involving

the Dis scale, as four of the original fourteen items making up this scale are missing. The other item (38) is part of the ES scale.

Student Alcohol Use Questionnaire

In developing the Student Alcohol Use Questionnaire, the writer surveyed other questionnaires developed by Hughes (1971), Riggs (1971), Wozny (1971), and the Edmonton Public School Board Drug Survey (1971), as well as several brochures, pamphlets, articles, and texts from the Alberta Alcoholism and Drug Abuse Commission in Edmonton, which described behaviors and attitudes associated with student alcohol consumption. Questions and information from these sources were selected and developed to produce a twenty-four item forced-choice questionnaire.

THE SAMPLE

The study was carried out at Strathcona Composite High School in Edmonton, Alberta, a school of approximately eleven hundred students coming from a wide range of social strata. Programs offered in the school are largely "academic" but a variety of optional courses are also available.

The subjects participating in this study consisted of three hundred and eight of a total possible four hundred and thirty grade twelve students, of which one hundred and fifty-six were females and one hundred and fifty-two were males.

The remaining grade twelve students were either absent the day of testing or were not registered in a grade twelve course during the first two periods of the day.

The method used to select the three subgroups for each scale in this study is similar to that used previously by other investigators. In one study, Zuckerman, Neary and Brustman (1970) used the upper and lower deciles of the General scale of the SSS to define high and low sensation seekers, and compared them on several variables involving various experiences (i.e., smoking, drugs, sex, alcohol, etc.) and preference for complexity. Zuckerman (1972) also reported using subjects scoring in the top and bottom fifteen percent of the distribution on the General scale of the SSS, as a method of selecting high and low sensation seekers and compared the two groups on Galvonic Skin Responses. In another study, Hocking and Robertson (1969) reported selecting the fifteen highest and lowest scorers from the total sample to identify the high and low sensation seekers and compared them in their need for stimulation under conditions of sensory restriction.

Although the writer could find no studies in which a subgroup identified as moderate sensation seeker was used, it appears that examination of such a group provides a clearer picture of the extent to which sensation seeking is related to each variable.

From the total sample, three subgroups for each scale of the SSS were selected as follows:

1. High Sensation Seekers (HSS) - The top two deciles (62 subjects) of scores for each of the five scales of the SSS for the total sample of three hundred and eight students. There was therefore a separate high sensation seeker subgroup for each of the five scale of the SSS (e.g., a Disinhibition HSS subgroup).
2. Moderate Sensation Seekers (MSS) - The middle two deciles (62 subjects) of scores for each of the five scales of the SSS for the total sample of three hundred and eight students. There was therefore a separate moderate sensation seeker subgroup for each of the five scales of the SSS (e.g., a Disinhibition MSS subgroup).
3. Low Sensation Seekers (LSS) - The lowest two deciles (62 subjects) of scores for each of the five scales of the SSS for the total sample of three hundred and eight students. There was therefore a separate low sensation seeker subgroup for each of the five scales of the SSS (e.g., a Disinhibition LSS subgroup).

A total of four deciles were eliminated due to the above procedures.

COLLECTION OF DATA

The SSS, Form IV and the Student Alcohol Use Questionnaire were combined to form a two part questionnaire (Appendix A) which was administered to thirteen grade twelve classes occurring at the beginning of the school day in the

second semester of the 1972-73 school term. The combined questionnaires were administered to all classes by the author to ensure continuity of administration. Participation of individual students was on a voluntary basis in each class, and teachers of each class provided course work for all students who did not wish to participate. None of the students refused to participate.

Students were asked to identify themselves and put their answers to the combined SSS and Student Alcohol Use Questionnaire on separate answer sheets. The time required for the combined questionnaires ranged from thirty to forty-five minutes.

School and College Ability Test (SCAT) scores, available for most students from SCAT tests given in grade nine, were obtained from the Department of Research, Development and Examinations of the Department of Education to be used as an indication of the academic ability of each subject. These scores were added to the appropriate answer sheets for each subject.

The final progress report for courses taken in the first semester of the 1972-73 term was used to obtain both the mean academic achievement and the mean classes absent per course for each student. This information together with the number and types of courses taken during the first semester was also added to the appropriate answer sheet for each subject.

The answer sheets were then optically scored and all

the information was placed on computer cards. On the basis of their scores on each of the five scales of the SSS, three subgroups (HSS, MSS, LSS) were selected for each scale. Any subject on whom complete data was not available was eliminated from that part of the analysis for which the data was missing.

ANALYSIS OF DATA

The relation between sensation seeking and student alcohol use was compared using both behavioral and attitudinal aspects of alcohol use, as shown by responses on the Student Alcohol Use Questionnaire. The levels of significance (Chi-square) between the responses of the three subgroups for each correlate of student alcohol use was indicated with the criterion significance set at the .05 level.

The differences between the means of academic abilities, academic achievement, and class absences for the three subgroups was determined using analysis of variance procedures with the criterion significance set at the .05 level.

HYPOTHESES

Sensation seeking, it will be recalled, is a personality dimension which has been shown in previous studies to correlate with various attitudes, behaviors, and attributes of individuals and which can be measured by the SSS, Form IV.

The present study is designed to test the hypotheses

that sensation seeking is related to academic achievement, school attendance, academic ability, and alcohol use. The following five questions were investigated:

1. Is there a significant difference between the high, moderate and low sensation seeking subgroups, as defined by the Boredom Susceptibility scale of the SSS, in academic achievement, school attendance, academic ability, and alcohol use?
2. Is there a significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the Disinhibition scale of the SSS, in academic achievement, school attendance, academic ability and alcohol use?
3. Is there a significant difference between the high, moderate and low sensation seeking subgroups, as defined by the Experience Seeking scale of the SSS, in academic achievement, school attendance, academic ability, and alcohol use?
4. Is there a significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the Thrill and Adventure Seeking scale of the SSS, in academic achievement, school attendance, academic ability, and alcohol use?
5. Is there a significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the General scale of the SSS, in academic achieve-

ment, school attendance, academic ability, and alcohol use?

CHAPTER IV

FINDINGS AND CONCLUSIONS

Introduction

The primary purpose of this investigation was to study the relationship between the personality dimension of sensation seeking and specific student attitudes, behaviors, and attributes.

An analysis was carried out to test the general null hypotheses which were stated in Chapter III. Specific null hypotheses relating to these are hereafter separately restated accompanied by the findings and conclusions appropriate to each.

HYPOTHESES

Hypotheses Using Subgroups Defined by the Boredom Susceptibility Scale (BS) of the SSS

The total possible score on the BS scale of the SSS is 18 (Appendix B). The scores on the BS scale which defined the three subgroups ranged as follows:

1. High Sensation Seekers = 10 - 15
2. Moderate Sensation Seekers = 6 - 8
3. Low Sensation Seekers = 0 - 5.

1. Hypothesis 1

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the (BS) scale of the SSS, in academic achievement.

(a) Findings

The means and standard deviations of the three subgroup's academic achievement are compiled in Table 1. The difference between means of academic achievement was determined using analysis of variance. The results, which are shown in Table 2, indicate that the difference is not significant beyond the .05 level.

(b) Conclusion

The first hypothesis is confirmed and it may be concluded that the three subgroups do not differ significantly in academic achievement.

2. Hypothesis 2

There will be no significant difference between high, moderate, and low sensation seeking subgroups, as defined by the BS scale of the SSS, in school attendance.

(a) Findings

The means and standard deviations of the absent classes per course for each subgroup are compiled in Table 1. The difference between means of absent classes was determined

TABLE 1

THE MEANS AND STANDARD DEVIATIONS OF THE ACADEMIC ACHIEVEMENT, CLASS ABSENCES, AND ACADEMIC ABILITY OF HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE BS SCALE OF THE SSS

Variable	Subgroup	N*	Mean	SD
Academic Achievement	HSS	58	64.00	10.67
	MSS	56	65.64	9.44
	LSS	61	63.64	10.48
Class Absences	HSS	58	7.10	5.40
	MSS	56	6.31	5.78
	LSS	61	6.01	6.40
Academic Ability	HSS	62	70.24	23.07
	MSS	60	54.87	29.67
	LSS	59	56.22	28.99

* N = Number of each subgroup for which variable information was available.

TABLE 2

SUMMARY, ANALYSES OF VARIANCE OF THE ACADEMIC ACHIEVEMENT, CLASS ABSENCES, AND ACADEMIC ABILITY OF HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE BS SCALE OF THE SSS

Variable	Source	MS	df	F-ratio	P
Academic Achievement	Groups	65.41	2.	0.63	0.5361
	Error	104.53	172.		
Class Absences	Groups	18.62	2.	0.55	0.5783
	Error	33.89	172.		
Academic Ability	Groups	4433.78	2.	5.93	0.0032
	Error	747.99	178.		

using analysis of variance. The results which are shown in Table 2 indicate that the difference is not significant beyond the .05 level.

(b) Conclusion

Hypothesis 2 is confirmed and it may be concluded that the three subgroups do not differ significantly in school attendance.

3. Hypothesis 3

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the BS scale of the SSS, in academic ability.

(a) Findings

The means and standard deviations of the three subgroup's academic ability are compiled in Table 1. Analysis of variance was used to determine the differences between the means of these scores. The results which are shown in Table 2 indicate the difference is significant beyond the .05 level. The high sensation seeker's mean academic ability was higher than both the moderate and low sensation seeker subgroups.

A probability matrix for Scheffé's multiple comparison of means indicates there is a significant difference between the high and low subgroups and the high and moderate subgroups in academic ability as shown in Table 3.

TABLE 3

PROBABILITY MATRIX FOR SCHEFFÉ'S MULTIPLE COMPARISON OF MEANS OF ACADEMIC ABILITY FOR THE HIGH, MODERATE AND LOW SENSATION SEEKING SUBGROUPS DEFINED BY THE BOREDOM SUSCEPTIBILITY SCALE

	Low	Moderate	High
Low	1.0000	0.9642	0.0205
Moderate	0.9642	1.0000	0.0092
High	0.0205	0.0092	1.0000

(b) Conclusion

The third hypothesis must be rejected and it is concluded that there is significant difference in academic ability between the three subgroups, as defined by the BS scale of the SSS.

4. Hypothesis 4

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the BS scale of the SSS, in alcohol use, as indicated by responses to the Student Alcohol Use Questionnaire.

(a) Findings

The three subgroups were compared for alcohol use by

using responses on the Student Alcohol Use Questionnaire (Appendix A). The levels of significance (Chi-square probability) of the differences in responses for each question concerning alcohol use is indicated in Table 4 and the significant results ($p = < .05$) are elaborated on in Appendix C.

These results indicate that the higher the degree of sensation seeking, the greater the tendency to indicate drinking alcoholic beverages (question 72); to indicate beginning to drink at an earlier age (question 75); and to indicate the desire to use alcohol and "other drugs" if other drugs were legal (question 89).

(b) Conclusion

Hypothesis 4 is rejected as there are significant differences in reported alcohol use between the three subgroups as defined by the BS scale of the SSS.

Hypotheses Using Subgroups Defined by the Disinhibition Scale (Dis) of the SSS

The total possible score on the Dis scale of the SSS is 10 (Appendix B). The scores on the Dis scale which defined the three subgroups ranged as follows:

1. High Sensation Seekers = 6 - 9
2. Moderate Sensation Seekers = 3 - 4
3. Low Sensation Seekers = 0 - 1.

TABLE 4

RELATION BETWEEN SENSATION SEEKING, AS DEFINED BY THE BS SCALE OF THE SSS, AND ALCOHOL USE, AS INDICATED BY RESPONSES TO THE STUDENT ALCOHOL USE QUESTIONNAIRE

Question Number	Chi-Square Probability	
72	0.0000	
73	0.5071	(n.s.)
74	0.3334	(n.s.)
75	0.0113	
76	0.3927	(n.s.)
77	0.0607	(n.s.)
78	0.4350	(n.s.)
79	0.3370	(n.s.)
80	0.0146	(n.s.)
81	0.5443	(n.s.)
82	0.2962	(n.s.)
83	0.6550	(n.s.)
84	0.6604	(n.s.)
85	0.2394	(n.s.)
86	0.9141	(n.s.)
87	0.3264	(n.s.)
88	0.1163	(n.s.)
89	0.0000	
90	0.2692	(n.s.)
91	0.8785	(n.s.)

1. Hypothesis 5

There will be no significant difference between the high, moderate, and low sensation subgroups, as defined by the Dis scale of the SSS, in academic achievement.

(a) Findings

The means and standard deviations of the academic achievement of the three subgroups are reported in Table 5. The difference between means was determined using analysis of variance and the results which are shown in Table 6 indicate there is a significant difference beyond the .05 level. The high sensation seeker's mean academic achievement was significantly lower than both the moderate and low sensation seeker subgroups. The moderate sensation seeker's mean academic achievement was also significantly lower than the low sensation seeker subgroup.

A probability matrix for Scheffé's multiple comparison of means indicates there is a significant difference between the high and low subgroups and the moderate and low subgroups in academic achievement as shown in Table 7.

(b) Conclusion

The fifth hypothesis must be rejected and it is concluded that there is a significant difference in academic achievement between the three subgroups as defined by the Dis scale of the SSS.

TABLE 5

THE MEANS AND STANDARD DEVIATIONS OF THE ACADEMIC ACHIEVEMENT, CLASS ABSENCES, AND ACADEMIC ABILITY OF HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE Dis SCALE OF THE SSS

Variable	Subgroup	N*	Mean	SD
Academic Achievement	HSS	60	61.58	9.07
	MSS	57	63.05	9.07
	LSS	60	69.64	10.59
Class Absences	HSS	60	6.74	6.09
	MSS	57	6.55	5.44
	LSS	60	5.14	4.86
Academic Ability	HSS	58	59.50	27.20
	MSS	61	54.59	29.73
	LSS	60	65.71	27.62

* N = Number of each subgroup for which variable information was available.

TABLE 6

SUMMARY, ANALYSES OF VARIANCE OF THE ACADEMIC ACHIEVEMENT, CLASS ABSENCES, AND ACADEMIC ABILITY OF HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE Dis SCALE OF THE SSS

Variable	Source	MS	df	F-ratio	P
Academic Achievement	Groups	1100.53	2.	11.90	0.0000
	Error	92.51	174.		
Class Absences	Groups	45.61	2.	1.51	0.2233
	Error	30.16	174.		
Academic Ability	Groups	1879.56	2.	2.36	0.0976
	Error	797.13	176.		

TABLE 7

PROBABILITY MATRIX FOR SCHEFFÉ'S MULTIPLE COMPARISON OF MEANS OF ACADEMIC ACHIEVEMENT FOR HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS AS DEFINED BY THE DISINHIBITION SCALE

	Low	Moderate	High
Low	1.0000	0.0014	0.0001
Moderate	0.0014	1.0000	0.7126
High	0.0001	0.7126	1.0000

2. Hypothesis 6

There will be no significant difference between high, moderate, and low sensation seeking subgroups, as defined by the Dis scale of the SSS, in school attendance.

(a) Findings

The means and standard deviations of the absent classes per course for each subgroup are compiled in Table 5. The difference between means of absent classes was determined using analysis of variance and the results shown in Table 6 indicate that the difference is not significant beyond the .05 level.

(b) Conclusion

Hypothesis 6 is confirmed and it may be concluded that

the three subgroups do not differ significantly in school attendance.

3. Hypothesis 7

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the Dis scale, of the SSS, in academic ability.

(a) Findings

The means and standard deviations of the academic ability of each subgroup are reproduced in Table 5. The difference between means of academic ability was determined using analysis of variance and the results which are shown in Table 6 indicate that the difference is not significant beyond the .05 level.

(b) Conclusion

Hypothesis 7 is confirmed and it may be concluded that the three subgroups do not differ significantly in academic ability.

4. Hypothesis 8

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the Dis scale, of the SSS, in alcohol use, as indicated by responses to the Student Alcohol Use Questionnaire.

(a) Findings

The three subgroups were compared for alcohol use by using responses on the Student Alcohol Use Questionnaire (Appendix A). The levels of significance (Chi square probability) of the differences in responses by each subgroup for each question concerning alcohol use is indicated in Table 8, and the significant results are elaborated on in Appendix D.

These results indicate that the higher the degree of sensation seeking, the greater the tendency to indicate drinking alcoholic beverages (question 72); to indicate drinking more frequently (question 73); to indicate drinking in situations that involve a number of peers (questions 74 and 87); to respond in such a way as to exhibit conditions usually associated with 'problem drinking' (questions 77, 79, 80, 81, 83, and 86); to indicate drinking more openly (question 85); to indicate the desire to use alcohol and 'other drugs' if other drugs were legal (question 89); and to indicate that drinking is not a serious problem among high school students (question 91).

(b) Conclusion

The eighth hypothesis is rejected as there are significant differences in reported alcohol use between the three subgroups as defined by the Dis scale of the SSS.

TABLE 8

RELATION BETWEEN SENSATION SEEKING, AS DEFINED BY THE Dis SCALE OF THE SSS, AND ALCOHOL USE, AS INDICATED BY RESPONSES TO THE STUDENT ALCOHOL USE QUESTIONNAIRE

Question Number	Chi-Square Probability	
72	0.0000	
73	0.0000	
74	0.0283	
75	0.1486	(n.s.)
76	0.1695	(n.s.)
77	0.0001	
78	0.3968	(n.s.)
79	0.0107	
80	0.0002	
81	0.0000	
82	0.1772	(n.s.)
83	0.0277	
84	0.2400	(n.s.)
85	0.0331	
86	0.0010	
87	0.0058	
88	0.0569	(n.s.)
89	0.0000	
90	0.7338	(n.s.)
91	0.0014	

Hypotheses Using Subgroups Defined by the Experience Seeking Scale (ES) of the SSS

The total possible score on the ES scale of the SSS is 17 (Appendix B). The scores on the ES scale which defined the three subgroups ranged as follows:

1. High Sensation Seekers = 12-16
2. Moderate Sensation Seekers = 8-10
3. Low Sensation Seekers = 1-6.

1. Hypothesis 9

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the ES scale of the SSS, in academic achievement.

(a) Findings

The means and standard deviations of the academic achievement of the three subgroups are reported in Table 9. The difference between means was determined using analysis of variance and the results which are shown in Table 10 indicate the difference is not significant beyond the .05 level.

(b) Conclusion

Hypothesis 9 is confirmed and it may be concluded that the three subgroups do not differ significantly in academic achievement.

TABLE 9

THE MEANS AND STANDARD DEVIATIONS OF THE ACADEMIC ACHIEVEMENT, CLASS ABSENCES, AND ACADEMIC ABILITY OF HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE ES SCALE OF THE SSS

Variable	Subgroup	N*	Mean	SD
Academic Achievement	HSS	59	62.23	8.96
	MSS	57	64.87	10.71
	LSS	61	65.88	10.92
Class Absences	HSS	59	8.22	6.58
	MSS	57	5.73	5.78
	LSS	61	4.99	4.79
Academic Ability	HSS	60	61.35	26.75
	MSS	61	55.38	29.57
	LSS	58	62.71	26.43

* N = Number of each subgroup for which variable information was available.

TABLE 10

SUMMARY, ANALYSIS OF VARIANCE OF THE ACADEMIC ACHIEVEMENT, CLASS ABSENCES, AND ACADEMIC ABILITY OF HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE ES SCALE OF THE SSS

Variable	Source	MS	df	F-ratio	P
Academic Achievement	Groups	211.75	2.	2.02	0.1356
	Error	104.76	174.		
Class Absences	Groups	179.59	2.	5.16	0.0067
	Error	33.08	174.		
Academic Ability	Groups	913.53	2.	1.20	0.3050
	Error	764.19	176.		

2. Hypothesis 10

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the ES scale of the SSS, in school attendance.

(a) Findings

The means and standard deviations of the absent classes per course for each subgroup are reported in Table 9. The difference between means was determined using analysis of variance and the results, which are shown in Table 10, indicate there is a significant difference beyond the .05 level. The high sensation seeker's mean absent classes per course was higher than both the moderate and low sensation seeker subgroups.

A probability matrix for Scheffé's multiple comparison of means indicated there is a significant difference between the high and low subgroups in school attendance as shown in Table 11.

(b) Conclusion

Hypothesis 10 is rejected as it is concluded that there is a significant difference in school attendance between the three subgroups as defined by the ES scale of the SSS.

3. Hypothesis 11

There will be no significant difference between high, moderate, and low sensation seeking subgroups, as defined by

TABLE 11

PROBABILITY MATRIX FOR SCHEFFÉ'S MULTIPLE COMPARISON OF MEANS OF SCHOOL ATTENDANCE FOR HIGH, MODERATE AND LOW SENSATION SEEKING SUBGROUPS AS DEFINED BY THE EXPERIENCE SEEKING SCALE

	Low	Moderate	High
Low	1.0000	0.7814	0.0099
Moderate	0.7814	1.0000	0.0691
High	0.0099	0.0691	1.0000

the ES scale of the SSS, in academic ability.

(a) Findings

The means and standard deviations of the academic ability of each subgroup are shown in Table 9. The difference between means of academic ability was determined using analysis of variance and the results, which are shown in Table 10 indicate that the difference is not significant beyond the .05 level.

(b) Conclusion

Hypothesis 11 is confirmed and it may be concluded that the three subgroups do not differ significantly in academic ability.

4. Hypothesis 12

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the ES scale of the SSS, in alcohol use as indicated by responses to the Student Alcohol Use Questionnaire.

(a) Findings

The three subgroups were compared for alcohol use by using responses on the Student Alcohol Use Questionnaire (Appendix A). The levels of significance (Chi-square probability) of the differences in responses for each question concerning alcohol use is indicated in Table 12 and the significant results ($p = < .05$ level) are elaborated on in Appendix E.

These results indicate that the higher the degree of sensation seeking, as defined by the ES scale of the SSS, the greater the tendency to indicate drinking alcoholic beverages (question 72); to indicate drinking more frequently (question 73); to indicate drinking in situations that involve a number of peers (questions 74 and 87); to respond in such a way as to exhibit conditions usually associated with 'problem drinking' (questions 77, 81, 86, and 88); and to indicate the desire to use alcohol and 'other drugs' if other drugs were legal (question 89).

(b) Conclusion

Hypothesis 12 is rejected as it is concluded that there

TABLE 12

RELATION BETWEEN SENSATION SEEKING, AS DEFINED BY THE ES SCALE OF THE SSS, AND ALCOHOL USE, AS INDICATED BY RESPONSE TO THE STUDENT ALCOHOL USE QUESTIONNAIRE

Question Number	Chi-Square Probability	
72	0.0000	
73	0.0003	
74	0.0326	
75	0.3148	(n.s.)
76	0.3335	(n.s.)
77	0.0032	
78	0.1224	(n.s.)
79	0.0765	(n.s.)
80	0.9619	(n.s.)
81	0.0018	
82	0.5748	(n.s.)
83	0.5433	(n.s.)
84	0.6391	(n.s.)
85	0.1984	(n.s.)
86	0.0146	
87	0.0158	
88	0.0164	
89	0.0000	
90	0.3300	(n.s.)
91	0.0684	(n.s.)

are significant differences in reported alcohol use between the three subgroups as defined by the ES scale of the SSS.

Hypotheses Using Subgroups Defined by the Thrill and Adventure Seeking (TAS) Scale of the SSS

The total possible score on the TAS scale of the SSS is 14 (Appendix B). The scores on the TAS scale which defined the three subgroups ranged as follows:

1. High Sensation Seekers = 13 - 14
2. Moderate Sensation Seekers = 11 - 12
3. Low Sensation Seekers = 2 - 9.

1. Hypothesis 13

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the TAS scale of the SSS, in academic achievement.

(a) Findings

The means and standard deviations of the academic achievement of the three subgroups are reported in Table 13. The difference between means was determined using analysis of variance and the results, which are shown in Table 14, indicate the difference is not significant beyond the .05 level.

(b) Conclusion

The thirteenth hypothesis is confirmed and it may be concluded that the three subgroups do not differ significant-

TABLE 13

THE MEANS AND STANDARD DEVIATIONS OF THE ACADEMIC ACHIEVEMENT, CLASS ABSENCES AND ACADEMIC ABILITY OF HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE TAS SCALE OF THE SSS

Variable	Subgroup	N*	Mean	SD
Academic Achievement	HSS	58	62.45	11.39
	MSS	57	64.68	10.06
	LSS	57	64.04	10.13
Class Absences	HSS	58	7.07	6.14
	MSS	57	6.89	6.10
	LSS	57	5.14	4.75
Academic Ability	HSS	60	61.77	26.79
	MSS	61	57.74	27.24
	LSS	61	56.56	30.70

* N = Number of each subgroup for which variable information was available.

TABLE 14

SUMMARY, ANALYSIS OF VARIANCE OF THE ACADEMIC ACHIEVEMENT, CLASS ABSENCES, AND ACADEMIC ABILITY OF HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE TAS SCALE OF THE SSS

Variable	Source	MS	df	F-ratio	P
Academic Achievement	Groups	76.28	2.	0.69	0.5055
	Error	111.35	169.		
Class Absences	Groups	65.02	2.	2.00	0.1387
	Error	32.54	169.		
Academic Ability	Groups	450.31	2.	0.56	0.5710
	Error	801.06	179.		

ly in academic achievement.

2. Hypothesis 14

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the TAS scale of the SSS, in school attendance.

(a) Findings

The means and standard deviations of the absent classes per course for each subgroup are reported in Table 13. The difference between means was determined using analysis of variance and the results, which are shown in Table 14, indicate the difference is not significant beyond the .05 level.

(b) Conclusion

The fourteenth hypothesis is confirmed and it may be concluded that the three subgroups do not differ significantly in school attendance.

3. Hypothesis 15

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the TAS scale of the SSS, in academic ability.

(a) Findings

The means and standard deviations of the academic ability of the three subgroups are reported in Table 13. The

difference between means was determined using analysis of variance and the results, which are shown in Table 14, indicate the difference is not significant beyond the .05 level.

(b) Conclusion

The fifteenth hypothesis is confirmed and it may be concluded that the three subgroups do not differ significantly in academic ability.

4. Hypothesis 16

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the TAS scale of the SSS in alcohol use as indicated by responses to the Student Alochol Use Questionnaire.

(a) Findings

The three subgroups were compared for alcohol use by using responses on the Student Alcohol Use Questionnaire (Appendix A). The levels of significance (Chi square probability) of the differences in responses for each question concerning alcohol use is indicated in Table 15 and the significant results ($p = < .05$) are elaborated on in Appendix F.

These results indicate that the higher the degree of sensation seeking, as defined by the TAS scale of the SSS, the greater the tendency to indicate drinking alcoholic beverages (question 72).

TABLE 15

RELATION BETWEEN SENSATION SEEKING, AS DEFINED BY THE TAS SCALE OF THE SSS AND ALCOHOL USE, AS INDICATED BY RESPONSES TO THE STUDENT ALCOHOL USE QUESTIONNAIRE

Question Number	Chi-Square Probability	
72	0.0065	
73	0.1317	(n.s.)
74	0.3346	(n.s.)
75	0.9219	(n.s.)
76	0.8765	(n.s.)
77	0.5477	(n.s.)
78	0.4507	(n.s.)
79	0.4241	(n.s.)
80	0.2268	(n.s.)
81	0.4250	(n.s.)
82	0.0527	(n.s.)
83	0.2140	(n.s.)
84	0.5524	(n.s.)
85	0.4035	(n.s.)
86	0.7810	(n.s.)
87	0.2022	(n.s.)
88	0.3021	(n.s.)
89	0.4400	(n.s.)
90	0.4291	(n.s.)
91	0.4675	(n.s.)

(b) Conclusion

Hypothesis 16 is rejected as is concluded that there is a significant difference in reported alcohol use between the three subgroups as defined by the TAS scale of the SSS.

Hypotheses Using Subgroups Defined by the General (Gen) Scale of the SSS

The total possible score on the Gen scale of the SSS is 22 (Appendix B). The scores on the Gen scale which define the three subgroups ranged as follows:

1. High Sensation Seekers = 16 - 21
2. Moderate Sensation Seekers = 12 - 14
3. Low Sensation Seekers = 2 - 10.

1. Hypothesis 17

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the Gen scale of the SSS, in academic achievement.

(a) Findings

The means and standard deviations of the academic achievement of the three subgroups are reported in Table 16. The difference between means was determined using analysis of variance and the results, which are shown in Table 17, indicate the difference is not significant beyond the .05 level.

TABLE 16

THE MEANS AND STANDARD DEVIATIONS OF THE ACADEMIC ACHIEVEMENT, CLASS ABSENCES, AND ACADEMIC ABILITY OF HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE GEN SCALE OF THE SSS

Variable	Subgroup	N*	Mean	SD
Academic Achievement	HSS	59	65.22	9.31
	MSS	59	63.71	11.94
	LSS	58	63.28	10.36
Class Absences	HSS	59	6.37	5.47
	MSS	59	7.03	7.87
	LSS	58	5.31	5.31
Academic Ability	HSS	61	69.03	22.32
	MSS	59	59.64	27.73
	LSS	60	56.82	30.49

* N = Number of each subgroup for which variable information was available.

TABLE 17

SUMMARY, ANALYSES OF VARIANCE OF THE ACADEMIC ACHIEVEMENT, CLASS ABSENCES, AND ACADEMIC ABILITY OF HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE GEN SCALE OF THE SSS

Variable	Source	MS	df	F-ratio	P
Academic Achievement	Groups	61.16	2.	0.54	0.5810
	Error	112.27	173.		
Class Absences	Groups	43.56	2.	1.09	0.3410
	Error	40.12	173.		
Academic Ability	Groups	2476.97	2.	3.39	0.0360
	Error	730.90	177.		

(b) Conclusion

Hypothesis 17 is confirmed and it may be concluded that the three subgroups do not differ significantly in academic achievement.

2. Hypothesis 18

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the Gen scale of the SSS, in school attendance.

(a) Findings

The means and standard deviations of the absent classes per course for each subgroup are reported in Table 16. The difference between means was determined using analysis of variance and the results, which are shown in Table 17, indicate the difference is not significant beyond the .05 level.

(b) Conclusion

Hypothesis 18 is confirmed and it may be concluded that the three subgroups do not differ significantly in school attendance.

3. Hypothesis 19

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the Gen scale of the SSS, in academic ability.

(a) Findings

The means and standard deviations of the academic ability of the three subgroups are reported in Table 16. The difference between means was determined using analysis of variance and the results, which are shown in Table 17, indicate there is a significant difference beyond the .05 level. The high sensation seeker's mean academic ability was higher than both the moderate and low sensation seeker subgroups.

A probability matrix for Scheffé's multiple comparison of means indicated there is a significant difference between the high and low subgroups in academic ability as shown in Table 18.

TABLE 18

PROBABILITY MATRIX FOR SCHEFFÉ'S MULTIPLE COMPARISON OF MEANS OF ACADEMIC ABILITY FOR HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS AS DEFINED BY THE GENERAL SCALE

	Low	Moderate	High
Low	1.0000	0.8500	0.0481
Moderate	0.8500	1.0000	0.1669
High	0.0481	0.1669	1.0000

(b) Conclusion

Hypothesis 19 is rejected as it is concluded that there is a significant difference in school attendance between the three subgroups as defined by the Gen scale of the SSS.

4. Hypothesis 20

There will be no significant difference between the high, moderate, and low sensation seeking subgroups, as defined by the Gen scale of the SSS, in alcohol use, as indicated by responses to the Student Alcohol Use Questionnaire.

(a) Findings

The three subgroups were compared for alcohol use by using responses on the Student Alcohol Use Questionnaire (Appendix A). The levels of significance (Chi square probability) of the differences in responses for each question concerning alcohol use is indicated in Table 19 and the significant results are elaborated on in Appendix G.

These results indicate that the higher the degree of sensation seeking, as defined by the Gen scale of the SSS, the greater the tendency to indicate drinking alcoholic beverages (question 72); to indicate drinking more frequently (question 73); to respond in such a way as to exhibit conditions ususally associated with problem drinking (questions 76 and 88); and to indicate the desire to use alcohol and 'other drugs' if other drugs were legal (question 89).

TABLE 19

RELATION BETWEEN SENSATION SEEKING AS DEFINED BY THE GENERAL SCALE OF THE SSS AND ALCOHOL USE, AS INDICATED BY RESPONSES TO THE STUDENT ALCOHOL USE QUESTIONNAIRE

Question Number	Chi-Square Probability	
72	0.0002	
73	0.0236	
74	0.3213	(n.s.)
75	0.1124	(n.s.)
76	0.0420	
77	0.4419	(n.s.)
78	0.9392	(n.s.)
79	0.1237	(n.s.)
80	0.9840	(n.s.)
81	0.1379	(n.s.)
82	0.2208	(n.s.)
83	0.2543	(n.s.)
84	0.7562	(n.s.)
85	0.0356	
86	0.1371	(n.s.)
87	0.0514	(n.s.)
88	0.0370	
89	0.0001	
90	0.1843	(n.s.)
91	0.9805	(n.s.)

(b) Conclusion

Hypothesis 20 is rejected as it is concluded that there are significant differences in reported alcohol use between the three subgroups as defined by the Gen scale of the SSS.

OTHER FINDINGS

Some interesting and hopefully meaningful descriptive comparisons of each subgroup are discussed under the following headings: Age, Post Secondary Plans, and High School Program.

Age

It was indicated in Chapter III that the trait of sensation seeking increases with age until some time in adolescence, levels off, and then falls with increasing age. It would therefore appear important that the three subgroups of sensation seekers, as defined by each scale of the SSS, be of similar ages in order that they might be comparable.

Using question 69 from the Student Alcohol Use Questionnaire, no significant Chi square probabilities, for any scale of the SSS, were found indicating there were no significant differences in the ages of the three subgroups.

Post Secondary Plans

Question 71 of the combined questionnaire asks for plans after high school. Only the subgroups defined by the

Experience Seeking (ES) scale of the SSS had a significantly different Chi square probability for their responses ($p = 0.0113$). These results indicate that the higher the degree of ES sensation seeking the greater the tendency to indicate the desire to travel after high school which is consistent with the characteristics of this subgroup.

High School Program

In order that the three subgroups defined by each scale of the SSS be comparable for academic achievement and school attendance, it would appear they should have similar high school programs. Because the progress reports for the first semester of the 1972-73 year were used as sources for academic achievement and school attendance of each subject, they were also used to compare high school programs.

The number of 'academic' courses, number of grade twelve courses, and the total number of courses for the subgroups defined by each scale of the SSS, were compared using analyses of variance techniques. There were no significant differences ($p = < .05$) on any of the high school program variables, for the subgroups defined by any of the scales of the SSS, thus showing that the high school programs of the three subgroups were similar.

SUMMARY OF CONCLUSIONS

The findings involving sensation seeking, as defined

by the Boredom Susceptibility scale of the SSS, support the acceptance of the hypotheses involving academic achievement and school attendance, but lead to rejection of the hypotheses which involved academic ability and alcohol use, indicating the three subgroups of sensation seekers (HSS, MSS, LSS) differed significantly in academic ability and reported alcohol use.

Using the Disinhibition scale of the SSS, the hypotheses involving school attendance and academic ability are accepted, but the hypotheses which involved academic achievement and alcohol use are rejected, indicating the three subgroups differed significantly in academic achievement and reported alcohol use.

The findings involving the three subgroups defined by the Experience Seeking scale of the SSS support acceptance of the hypotheses concerned with academic achievement and academic ability, but lead to rejection of the hypotheses which involved school attendance and alcohol use, indicating the three subgroups differed significantly in school attendance and reported alcohol use.

Using the Thrill and Adventure Seeking scale of the SSS, the hypotheses involving academic achievement, school attendance, and academic ability are accepted but the hypothesis concerned with alcohol use is rejected, indicating the three subgroups differed in reported alcohol use.

Finally, the findings involving sensation seeking, as defined by the General scale of the SSS, support the accept-

ance of the hypotheses involving academic achievement and school attendance, but lead to rejection of the hypotheses which involved academic ability and alcohol use, signifying the three subgroups differed significantly in academic ability and reported alcohol use.

CHAPTER V

SUMMARY AND IMPLICATIONS

SUMMARY

The combined Sensation Seeking Scale (SSS) Form IV, and Student Alcohol Use Questionnaire was administered to three hundred and eight grade twelve students in an Edmonton Composite High School. A high, moderate, and low sensation seeking subgroup was defined from scores on each of the five scales of the SSS and compared for academic achievement, school attendance, academic ability, and reported alcohol use. The results of the study indicate that the personality dimension of sensation seeking, as measured by the various scales of the SSS, is related in varying degrees to academic achievement, school attendance, academic ability, and reported alcohol use.

The high, moderate, and low subgroups of sensation seekers, as defined by the Disinhibition scale of the SSS differed significantly in academic achievement with the high subgroup's mean academic achievement being significantly lower than both the moderate and low subgroups, and the moderate subgroup's mean academic achievement being significantly lower than the low subgroup. The subgroups defined by the other scales of the SSS did not significantly differ in

academic achievement.

The only scale of the SSS to significantly distinguish between the school attendance of the high, moderate, and low sensation seeking subgroups, was the Experience Seeking scale, with the high sensation seeking subgroup having a significantly higher mean absent classes per course than the low sensation seeking subgroup. These results appear to be consistent with the wanderlust, 'flouting of irrational authority', and 'experience for its own sake', characteristics of Experience Seeking factor.

The academic ability of the high, moderate, and low sensation seeking subgroups differed significantly for the Boredom Susceptibility and General scale of the SSS. For both scales, the high subgroup's mean academic ability was significantly higher than the low subgroup.

Significant differences existed in varying degrees between the high, moderate, and low sensation seeking subgroups, as defined by all scales of the SSS, in reported alcohol use. Specifically, depending on the scale used to define the three subgroups, the higher the degree of sensation seeking, the greater the tendency to indicate drinking alcoholic beverages; to indicate drinking more frequently; to indicate beginning to drink at an earlier age; to indicate drinking in situations that involve a number of peers; to respond in such a way as to exhibit conditions usually associated with 'problem drinking', such as drinking alone, passing out, fighting, usually consuming enough alcohol to become

intoxicated, driving after consuming alcohol, and allowing drinking to interfere with preparation for class; to indicate drinking more openly because of the reduction of the legal age of consumption to eighteen years of age, even though the majority of each group were under eighteen; to indicate the desire to use both alcohol and 'other drugs' if 'other drugs' were legal; and to indicate that drinking is not a serious problem among high school students.

It should be realized that the comparisons of the three subgroups occurred mainly between the members of each subgroup that indicated drinking alcoholic beverages. Several members of the low sensation seeking subgroups, defined by each scale of the SSS, reported not drinking alcoholic beverages and were therefore not involved with the reported responses to questions 73-88 of the Student Alcohol Use Questionnaire.

The five scales of the SSS vary in the degree to which they significantly distinguish between the three subgroups in reported alcohol use, with the three subgroups defined by the Disinhibition scale significantly differing more in reported alcohol use than the subgroups defined by any of the other scales. This relationship is probably partially explained by the fact that three of the ten items making up this scale relate directly to alcohol use. The Thrill and Adventure Seeking scale appeared to distinguish reported alcohol use between the three subgroups to a lesser extent than the other scales.

Significant results of this study, involving the five

scales of the SSS, indicate that the higher the degree of sensation seeking the greater the tendency for lower academic achievement, poorer school attendance, higher academic ability, and to indicate involvement with various patterns of alcohol use.

IMPLICATIONS FOR PRACTICE

In Counseling

Knowledge of the role of the personality dimension of sensation seeking in various student behaviors might aid the counselor in further understanding and assisting students. For example, students experiencing achievement and/or attendance problems might be given the SSS. If local norms for the SSS were available and the student had scored relatively high on the appropriate scales, the possibilities of the relationship between sensation seeking and low achievement and/or poor attendance might be explored, with the view that insight into these relationships might allow beneficial behavior modifications.

In Alcohol Education

The results of this study have implications for programs of alcohol prevention and education. Rather than focusing on the effects of alcohol in working with the abusive drinker, it may be more important to direct attention to identifying personality attributes which may be related to excessive

drinking. The SSS might therefore be used as a predictor of potential abusive drinkers. Individuals who reveal high sensation seeking tendencies could be encouraged to participate in a program of alcohol education. The alcohol education program itself could be shaped by the findings of this study to make it more effective and rewarding to its participants.

IMPLICATIONS FOR RESEARCH

The continuous direction of the significant results involving the three subgroups of sensation seekers in this study appears to indicate that future research should involve continuous statistical techniques, such as correlational statistics, rather than comparisons of distinct subgroups.

Further correlational studies showing the relationship of sensation seeking to other variables such as student drug usage, participation in extra-curricular activities, family size and birth order, etc., should be carried out.

Experimental studies involving attempts to modify the sensation seeking personality dimension would prove worthwhile if this modification could be shown to benefit the subjects in areas such as achievement and attendance, or some other variable which is shown to relate to sensation seeking.

SELECTED REFERENCES

Alberta Alcoholism and Drug Abuse Commission. If drinking is a problem. Edmonton, Alberta, 1971.

Alberta Alcoholism and Drug Abuse Commission. Facts about alcohol. Edmonton, Alberta, 1969.

Altus, W.D. A college achiever and non-achiever scale for the MMPI. Journal of Applied Psychology, 1948, 32, 385-397.

Blackburn, R. Sensation seeking, impulsivity and psychopathic personality. Journal of Consulting and Clinical Psychology, 1969, 33, 571-574.

Coleman, L.V. Personality traits of high academic achievers at Oklahoma Baptist University. Dissertation Abstracts, Unpublished Masters Thesis, University of Alberta, 1950.

Cooperative School and College Ability Tests: Manual for Interpreting Scores. Educational Testing Service: Los Angeles 27, California, 1957.

Cooperative School and College Ability Tests: Technical Report. Educational Testing Service: Los Angeles 27, 1958.

Courts, Fredrick A. Psychological statistics: an introduction. Illinois: The Dorsey Press, 1966.

Diener, C.L. Similarities and differences between over-achieving and under-achieving students. Personnel and Guidance Journal, 1960, 38, 396-400.

Edmonton Public School Board Drug Survey. Unpublished Manuscript, Edmonton, Alberta, 1971.

Edmonton Public School Board Principal's Handbook, Edmonton, Alberta, 1971-72.

Edwards, A.L. Edwards Personal Preference Schedule Revised Manual. New York: The Psychological Corporation, 1959.

Farley, F.H. and Farley, S.V. Extroversion and stimulus seeking motivation. Journal of Consulting Psychology, 1967, 31, 215-216.

Farley, F.H. and Farley, S.V. Impulsiveness, sociality, and the preference for varied experience. Perceptual and Motor Skills, 1970, 31, 47-50.

Frankel, E. A comparative study of achieving and under-achieving high school boys of high intellectual ability. Journal of Educational Research, 1960, 53, 172-180.

Goedicke, Rita. The relationship of personality variables to academic success. Unpublished Masters Thesis, University of Alberta, 1968.

Goldman, Leo. Using tests in counselling. New York: Appleton-Century-Crofts, Inc., 1961.

Hocking, J., and Robertson, M. The Sensation Seeking Scale as a predictor of need for stimulation during sensory restriction. Journal of Consulting and Clinical Psychology, 1969, 33, 367-369.

Hughes, J.W. Student drug use and the hang-loose ethic. Unpublished Masters Thesis, University of Alberta, 1971.

Knish, G.B. and Busse, W. Correlates of stimulus seeking: age, education, intelligence, and aptitudes. Journal of Consulting and Clinical Psychology, 1968, 32, 633-637.

Knish, G.B., and Donnenwerth, G.V. Sex differences in the correlates of stimulus seeking. Journal of Consulting and Clinical Psychology, 1972, 38, 42-49.

Krug, R.E. Over and underachievement and The Edwards Personal Preference Schedule. Journal of Applied Psychology, 1960, 43, 133-136.

Patsula, P.J. Relation of alienation and introversion to academic achievement among grade ten students. Unpublished Masters Thesis, University of Alberta, 1968.

Riggs, D.E. Students and drug use: a study of personality characteristics and extent of drug using behavior. Unpublished Masters Thesis, University of Alberta, 1971.

Schubert, D.S.P. Arousal seeking as a motivation for volunteering: MMPI scores and central-nervous-system-stimulant use as suggestive of a trait. Journal of Projective Techniques and Personality Assessment, 1964, 28, 337-340.

Segal, B., and Rose, R. Sensation seeking and alcohol use: a correlate in experience. Journal of Alcohol and Drug Education, 1972, 17, 8-12.

Vaughan, R.P. Academic achievement, ability and the MMPI scales. Personnel and Guidance Journal, 1967, 46, 156-159.

Welkowitz, J., Ewen, R.B., and Cohen, J. Introductory statistics for the behavioral sciences. New York: Academic Press, 1971.

Wozny, J.R. Psychological and sociological correlates of use and non-use of marijuana. Unpublished Masters Thesis, University of Alberta, 1971.

Zuckerman, M., Kolin, E.A., Price, L., and Zoob, I. Development of a Sensation Seeking Scale. Journal of Consulting Psychology, 1964, 28, 477-482.

Zuckerman, M., Schultz, D.P., and Hopkins, T.R. Sensation seeking and volunteering for sensory deprivation and hypnosis experiments. Journal of Consulting Psychology, 1967, 31, 358-363.

Zuckerman, M., and Link, K. Construct validity for the Sensation Seeking Scale. Journal of Consulting and Clinical Psychology, 1968, 32, 420-426.

Zuckerman, M. Theoretical formulations: In Zubek, J.P. (Ed.). Sensory deprivation: fifteen years of research. New York: Appleton-Century-Crofts, 1969.

Zuckerman, M., Neary, R.S., and Brustman, B.A. Sensation Seeking Scale correlates in experience (smoking, drugs, alcohol, "hallucinations" and sex) and preference for complexity (designs). Proceedings of the 78th Annual Convention of the American Psychological Association, Volume 5, 1970.

Zuckerman, M. Dimensions of sensation seeking. Journal of Consulting and Clinical Psychology, 1971, 36, 45-52.

Zuckerman, M. A preliminary manual and research report on the Sensation Seeking Scale. Unpublished manuscript, April, 1972.

APPENDICES

APPENDIX A

THE COMBINED SENSATION SEEKING SCALE, FORM IV AND STUDENT ALCOHOL USE QUESTIONNAIRE

This questionnaire, consisting of two parts, is part of a study concerned with various student attitudes and behaviors. Your participation in this study is on a voluntary basis and your name will not be associated with its results. Your answers will be treated with the strictest confidence and in no case will they be used to cause you any embarrassment.

PART A. Interest and Preference Test - Form IV SSS (Items 1-67)

Each of the items below contains two choices a. and b. Please indicate on your answer sheet which of the choices most describes your likes or the way you feel. In some cases you may find items in which both choices describe your likes or feelings. In these cases mark the choice that most describes your likes or feelings. In some cases you may find items in which you do not like either choice. In these cases mark the choice you dislike least. I am interested only in your likes or feelings, not in how others feel about these things or how one is supposed to feel. There are no right or wrong answers so be frank and give your honest appraisal of yourself.

---

1. a. I dislike the sensations one gets when flying.
   b. I enjoy many of the rides in amusement parks.

2. a. I would like a job which would require a lot of travelling.
   b. I would prefer a job in one location.

3. a. I would like to hitchhike across the country.
   b. Hitchhiking is too dangerous a way to travel.

4. a. I do not find gambling worth the risk.
   b. I like to gamble for money.

5. a. I can't wait to get into the indoors on a cold day.
   b. I am invigorated by a brisk, cold day.

6. a. I like 'wild' uninhibited parties.
   b. I prefer quiet parties with good conversation.

7. a. I can't stand watching a movie that I've seen before.
   b. There are some movies I enjoy seeing a second or even a third time.

8. a. Using 'four letter words' in public is vulgar and inconsiderate of the feelings of others.
   b. I sometimes use 'four letter words' to express my feelings or to shock someone.

9. a. I find a certain pleasure in routine kinds of work.
   b. Although it is sometimes necessary, I usually dislike routine kinds of work.

10. a. I often wish I could be a mountain climber.
    b. I can't understand people who risk their necks climbing mountains.

11. a. I dislike all body odors.
    b. I like some of the earthly body smells.

12. a. I get bored seeing the same old faces.
    b. I like the comfortable familiarity of everday friends.

13. a. I like to dress in unusual styles.
    b. I tend to dress conservatively.

14. a. I am only interested in travelling in civilized parts of the world.
    b. I would like to travel to strange, out of the way places like the upper Amazon or Anarctica.

15. a. I like to explore a strange city or section of town by myself, even if it means getting lost.
    b. I prefer a guide when I am in a place I don't know well.

16. a. I dislike people who do or say things just to shock or upset others.
    b. When you can predict almost everything a person will do and say he or she must be a bore.

17. a. I usually don't enjoy a movie or play where I can predict what will happen in advance.
    b. I don't mind watching a movie or play where I can predict what will happen in advance.

18. a. I have tried marijuana or would like to.
    b. I would never smoke marijuana.

19. a. I would not like to try any drug which might produce strange and dangerous effects on me.
    b. I would like to try some of the new drugs that produce hallucinations.

20. a. I would prefer living in an ideal society where everyone is safe, secure and happy.
    b. I would have preferred living in the unsettled days of our history.

21. a. A sensible person avoids activities that are dangerous.
    b. I sometimes like to do things that are a little frightening.

22. a. I dislike 'swingers'.
    b. I enjoy the company of real 'swingers'.

23. a. I find that stimulants make me uncomfortable.
    b. I often like to get high (drinking or smoking marijuana.

24. a. A person should change jobs from time to time simply to avoid getting into a rut.
    b. A person should find a job which is fairly satisfying to him and stick with it.

25. a. I order the dishes with which I am familiar, so as to avoid disappointment and unpleasantness.
    b. I like to try new foods that I have never tasted before.

26. a. I enjoy looking at home movies or travel slides.
    b. Looking at someone's home movies or travel slides bores me tremendously.

27. a. I like to try new brands on the chance of finding something different or better.
    b. I stick to the brands I know are reliable.

28. a. I would like to take up the sport of water-skiing.
    b. I would not like to take up water-skiing.

29. a. I would like to try surf-board riding.
    b. I would not like to try surf-board riding.

30. a. I find people who disagree with my beliefs more stimulating than people who agree with me.
    b. I don't like to argue with people whose beliefs are sharply divergent from mine, since such arguments are never resolved.

31. a. I would like to take off on a trip with no pre-planned or definite routes, or timetable.
    b. When I go on a trip I like to plan my route and timetable fairly carefully.

32. a. I prefer the 'down-to-earth' kinds of people as friends.
    b. I would like to make friends in some of the 'far-out' groups like artists or 'hippies'.

33. a. I would not like to learn to fly an airplane.
    b. I would like to learn to fly an airplane.

34. a. Most beards are unsightly.
    b. I like to see men wearing beards.

35. a. I would like to go scuba diving.
    b. I prefer the surface of the water to the depths.

36. a. I prefer modern jazz or classical music to more popular or light classical music.
    b. I prefer popular or light classical music to modern jazz or classical music.

37. a. I like to drive in open convertibles.
    b. I do not like to drive in open convertibles.

38. a. I would like to have the experience of being hypnotized.
    b. I would not like to be hypnotized.

39. a. The most important goal of life is to live it to the fullest and experience as much of it as you can.
    b. The most important goal of life is to find peace and happiness.

40. a. I would like to try parachute jumping.
    b. I would never want to try jumping out of a plane with or without a parachute.

41. a. I enter cold water gradually giving myself time to get used to it.
    b. I like to dive or jump right into the ocean or cold pool.

42. a. I do not like the irregularity and discord of most modern music.
    b. I like to listen to new and unusual kinds of music.

43. a. I prefer friends who are excitingly unpredictable.
    b. I prefer friends who are reliable and predictable.

44. a. I am not interested in experience for its own sake.
    b. I like to have new and exciting experiences and sensations even if they are a little frightening, unconventional or illegal.

45. a. When I go on a vacation, I prefer the comfort of a good room and bed.
    b. When I go on a vacation, I would prefer the change of camping out.

46. a. When I go in an ocean or lake I like to stay close to shore.
    b. Sometimes I like to swim far out from the shore.

47. a. I often enjoy flouting irrational authority.
    b. I am generally respectful of lawful authority.

48. a. The essence of good art is in its clarity, symmetry of form and harmony of colours.
    b. I often find beauty in the 'clashing' colours and irregular forms of modern painting.

49. a. I enjoy spending time in the familiar surroundings of home.
    b. I get very restless if I have to stay around home for any length of time.

50. a. I like to dive off the high board.
    b. I don't like the feeling I get standing on the high board (or I don't go near it at all).

51. a. I like to date members of the opposite sex who are physically exciting.
    b. I like to date members of the opposite sex who share my values.

52. a. Heavy drinking usually ruins a party because some people get loud and boisterous.
    b. Keeping the drinks full is the key to a good party.

53. a. I sometimes like to do 'crazy' things just to see the effects on others.
    b. I almost always behave in a normal way. I am not interested in shocking or upsetting others.

54. a. The worst social sin is to be rude.
    b. The worst social sin is to be a bore.

55. a. I look forward to a good night of rest after a long day.
    b. I wish I didn't have to waste so much of a day sleeping.

56. a. Even if I had the money I would not care to associate with flighty persons like those in the 'jet set'.
    b. I could conceive of myself seeking pleasures around the world with the 'jet set'.

57. a. I like people who are sharp and witty even if they do sometimes insult others.
    b. I dislike people who have their fun at the expenses of hurting the feelings of others.

58. a. Almost everything enjoyable is illegal or immoral.
    b. The most enjoyable things are perfectly legal and moral.

59. a. A good painting should shock or jolt the senses.
    b. A good painting should give one a feeling of peace and security.

60. a. I do not enjoy discussions where people get so 'heated up' they end up insulting each other.
    b. I enjoy a heated intellectual argument even if people sometimes get upset.

61. a. I feel best after taking a couple of drinks.
    b. Something is wrong with people who need liquor to feel good.

62. a. People who ride motorcycles must have some kind of an unconscious need to hurt themselves.
    b. I would like to drive or ride on a motorcycle.

63. a. People should dress according to some standards of taste, neatness and style.
    b. People should dress in individual ways even if the effects are sometimes strange.

64. a. Sailing long distances in small sailing crafts is foolhardy.
    b. I would like to sail a long distance in a small but seaworthy sailing craft.

65. a. I have no patience with dull or boring persons.
    b. I find something interesting in almost every person I talk with.

66. a. Skiing fast down a high mountain slope is a good way to end up on crutches.
    b. I think I would enjoy the sensations of skiing very fast down a high mountain slope.

67. a. I prefer people who are calm and even tempered.
    b. I prefer people who are emotionally expressive even if they are a bit unstable.

PART B. Student Alcohol Use Questionnaire (Items 68-91)

Answer the following questions on your answer sheet as they apply to you.

68. Sex:
    a. Male
    b. Female

69. Age:
    a. 16
    b. 17
    c. 18
    d. 19
    e. 20+

70. I live with:
    a. Both parents.
    b. My father.
    c. My mother.
    d. Foster parents.
    e. Other.

71. What are your plans after High School?
    a. Attend University.
    b. Attend a technical or commercial school.
    c. Find employment.
    d. Travel.
    e. Undecided.

72. Do you drink beer, whiskey, wine or other alcoholic beverages?
    a. Yes
    b. No

    ---If your answer is 'yes' continue with the following questions.
    If your answer is 'no' go to question 89.

73. How often do you drink alcoholic beverages?
    a. Less than once a month.
    b. Once a month.
    c. Twice a month.
    d. Once a week.
    e. More than once a week.

74. Where do you usually drink?
    a. In your home.
    b. In the home of friends.
    c. At parties.
    d. In cars.
    e. In bars.

75. The first time you consumed alcoholic beverages, you were a student in:
    a. Elementary School (Grades 1-6).
    b. Junior High School (Grades 7-9).
    c. High School (Grades 10-12).

76. Do you ever drink alone?
    a. Yes
    b. No

77. Have you ever gotten sick after drinking?
    a. Yes
    b. No

78. Have you ever been arrested for drinking?
    a. Yes
    b. No

79. Have you ever 'passed out' while drinking?
    a. Yes
    b. No

80. Have you ever had a physical fight while drinking?
    a. Yes
    b. No

81. When you drink do you usually consume enough alcohol to become intoxicated (drunk)?
    a. Yes
    b. No

82. Have you ever had a serious argument while drinking?
    a. Yes
    b. No

83. Have you ever driven a vehicle after drinking?
    a. Yes
    b. No

84. The reduction of the legal age for the consumption of alcohol in 1970 to 18 years of age has probably resulted in my drinking more often than if the age had remained at 21.
    a. Agree
    b. Disagree

85. The reduction of the legal age for the consumption of alcohol has resulted in my now drinking more openly than if it remained at 21.
    a. Agree
    b. Disagree

86. My drinking has steadily increased since coming to high school.
    a. Agree
    b. Disagree

87. With whom do you usually drink?
    a. A large social group.
    b. Small group of friends.
    c. Parents or other adults.
    d. Girlfriend or boyfriend.
    e. Alone.

88. At some time during my years in high school, drinking has interferred with my preparation for class (studying, attendance, homework, exams, etc.).
    a. Agree
    b. Disagree

89. If the use of drugs other than alcohol (such as marijuana, hashish, etc.) were declared legal would you probably:
    a. Use alcohol only?
    b. Use alcohol and other drugs?
    c. Use other drugs only?
    d. Use neither drugs nor alcohol?

90. Most students who drink alcoholic beverages do so:
    a. Because they like the taste.
    b. To forget worries (problems).
    c. To become intoxicated (drunk).
    d. To feel good (high).
    e. To celebrate special occasions.

91. Drinking is a serious problem among high school students in Edmonton.
    a. Agree
    b. Disagree

****

APPENDIX B

SCORING KEY FOR THE SENSATION SEEKING SCALE, FORM IV

Scoring Key for Modified Sensation Seeking Scale (SSS), Form IV

I. General SSS (Gen) 22 Items

Score: 2A, 5B, 10A, 11B, 12A, 15A, 19B, 20B, 21B, 28A, 31A, 33B, 38A, 39A, 40A, 41B, 43A, 45B, 48B, 59A, 62B, 67B.

II. Thrill and Adventure Seeking (TAS) 14 Items

Score: 1B, 10A, 21B, 28A, 29A, 33B, 35A, 37A, 40A, 46B, 50A, 62B, 64B, 66B.

III. Experience Seeking (ES) 17 Items

Score: 3A, 8B, 13A, 14B, 18A, 19B, 31A, 32B, 34B, 36A, 42B, 43A, 44B, 47A, 48B, 53A, 63B.

IV. Disinhibition (Dis) 10 Items

Score: 4B, 6A, 22B, 23B, 51A, 52B, 56B, 57A, 58A, 61A.

V. Boredom Susceptibility (BS) 18 Items

Score: 7A, 9B, 12A, 16B, 17A, 20B, 24A, 25B, 26B, 27A, 30A, 43A, 49B, 54B, 55B, 59A, 60B, 65A.

APPENDIX C

APPENDIX C

CHI SQUARE FOR HIGH, MODERATE AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE BS SCALE OF THE SSS, AND SIGNIFICANTLY DIFFERENT QUESTIONS OF THE STUDENT ALCOHOL USE QUESTIONNAIRE

QUESTION 72: Do you drink beer, whiskey, wine or other alcoholic beverages?

	Yes	No	N
HSS	61	1	62
MSS	57	5	62
LSS	43	19	62
TOTAL	161	25	186

Chi Square = 24.769; df = 2; p = 0.0000

QUESTION 75: The first time you consumed alcoholic beverages, you were a student in: a. elementary school
b. junior high school
c. high school

	a	b	c	N
HSS	15	35	11	61
MSS	5	28	24	57
LSS	8	27	8	43
TOTAL	28	90	43	161

Chi Square = 12.982; df = 4; p = 0.0113

QUESTION 89: If the use of drugs other than alcohol (such as marijuana, hashish, etc.) were declared legal would you probably:
a. use alcohol only?
b. use alcohol and other drugs?
c. Use other drugs only?
d. Use neither drugs nor alcohol?

	a	b	c	d	N
HSS	24	34	3	1	62
MSS	28	22	3	8	61
LSS	25	11	3	23	62
TOTAL	77	67	9	32	185

Chi Square = 35.686; df = 6; p = 0.0000

APPENDIX D

APPENDIX D

CHI SQUARE FOR HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE DIS SCALE OF THE SSS, AND SIGNIFICANTLY DIFFERENT QUESTIONS OF THE STUDENT ALCOHOL USE QUESTIONNAIRE

QUESTION 72: Do you drink beer, whiskey, wine or other alcoholic beverages?

	Yes	No	N
HSS	62	0	62
MSS	56	6	62
LSS	40	22	62
TOTAL	158	28	186

Chi Square = 32.626; df = 2; p = 0.0000

QUESTION 73: How often do you drink alcoholic beverages?
a. Less than once a month.
b. Once a month.
c. Twice a month.
d. Once a week.
e. More than once a week.

	a	b	c	d	e	N
HSS	3	3	13	28	15	62
MSS	12	13	18	10	4	57
LSS	19	5	10	6	0	40
TOTAL	34	21	41	44	19	159

Chi Square = 54.293; df = 8; p = 0.0000

QUESTION 74: Where do you usually drink alcoholic beverages?
a. In your home.
b. In the home of friends.
c. At parties.
d. In cars.
e. In bars.

	a	b	c	d	e	N
HSS	8	11	24	1	18	62
MSS	20	13	16	0	9	58
LSS	15	11	10	0	4	40
TOTAL	43	35	50	1	31	160

Chi Square = 17.181; df = 8; p = 0.0283

QUESTION 77: Have you ever gotton sick after drinking?

	Yes	No	N
HSS	52	10	62
MSS	41	17	58
LSS	17	23	40
TOTAL	110	50	160

Chi Square = 19.529; df = 2; p = 0.0001

QUESTION 79: Have you ever 'passed out' while drinking?

	Yes	No	N
HSS	27	37	62
MSS	17	41	58
LSS	5	35	40
TOTAL	57	113	160

Chi Square = 9.072; df = 2; p = 0.0107

QUESTION 80: Have you ever had a physical fight while drinking?

	Yes	No	N
HSS	19	43	62
MSS	6	52	58
LSS	1	39	40
TOTAL	26	134	160

Chi Square = 16.483; df = 2; p = 0.0002

QUESTION 81: When you drink do you usually consume enough alcohol to become intoxicated (drunk)?

	Yes	No	N
HSS	38	24	62
MSS	18	40	58
LSS	3	37	40
TOTAL	59	101	160

Chi Square = 31.555; df = 2; p = 0.000

QUESTION 83: Have you ever driven a vehicle after drinking?

	Yes	No	N
HSS	32	30	62
MSS	23	35	58
LSS	10	30	40
TOTAL	65	95	160

Chi Square = 7.175; df = 2; p = 0.0277

QUESTION 85: The reduction of the legal age for consumption of alcohol has resulted in my now drinking more openly than if it remained at 21.

	Agree	Disagree	N
HSS	49	13	62
MSS	37	20	57
LSS	22	18	40
TOTAL	108	51	159

Chi Square = 6.815; df = 2; p = 0.0331

QUESTION 86: My drinking has steadily increased since coming to high school.

	Agree	Disagree	N
HSS	32	30	60
MSS	22	35	57
LSS	6	34	40
TOTAL	60	99	159

Chi Square = 13.90; df = 2; p = 0.0010

QUESTION 87: With whom do you usually drink?
a. A large social group.
b. Small group of friends.
c. Parents or other adults.
d. Girlfriends or boyfriend.
e. Alone.

	a	b	c	d	e	N
HSS	15	38	4	1	1	59
MSS	5	43	6	3	0	57
LSS	2	24	11	3	0	40
TOTAL	22	105	21	7	1	156

Chi Square = 21.544; df = 8; p = 0.0058

QUESTION 89: If the use of drugs other than alcohol (such as marijuana, hashish, etc.) were declared legal would you probably:
a. Use alcohol only?
b. Use alcohol and other drugs?
c. Use other drugs only?
d. Use neither drugs nor alcohol?

	a	b	c	d	N
HSS	21	36	0	1	58
MSS	26	27	3	5	61
LSS	23	8	3	28	62
TOTAL	70	71	6	34	181

Chi Square = 57.859; df = 6; p = 0.0000

QUESTION 91: Drinking is a serious problem among high school students in Edmonton.

	Agree	Disagree	N
HSS	12	47	59
MSS	20	40	60
LSS	32	30	62
TOTAL	64	117	121

Chi Square = 13.098; df = 2; p = 0.0014

APPENDIX E

APPENDIX E

CHI SQUARE FOR HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE ES SCALE OF THE SSS, AND SIGNIFICANTLY DIFFERENT QUESTIONS OF THE STUDENT ALCOHOL USE QUESTIONNAIRE

QUESTION 72: Do you drink beer, whiskey, wine or other alcoholic beverages?

	Yes	No	N
HSS	62	0	62
MSS	55	7	62
LSS	38	24	62
TOTAL	155	31	186

Chi Square = 35.381; df = 2; p = 0.0000

QUESTION 73: How often do you drink alcoholic beverages?
a. Less than once a month.
b. Once a month.
c. Twice a month.
d. Once a week.
e. More than once a week.

	a	b	c	d	e	N
HSS	3	10	14	26	9	62
MSS	14	7	16	11	8	56
LSS	17	4	10	7	1	39
TOTAL	34	21	40	44	18	157

Chi Square = 28.817; df = 8; p = 0.0003

QUESTION 74: Where do you usually drink?
a. In your home.
b. In the home of friends.
c. At parties.
d. In cars.
e. In bars.

	a	b	c	d	e	N
HSS	9	14	21	0	18	62
MSS	17	9	15	0	15	56
LSS	14	12	9	1	3	39
TOTAL	40	35	45	1	36	157

Chi Square = 16.766; df = 8; p = 0.0326

QUESTION 77: Have you ever gotten sick after drinking?

	Yes	No	N
HSS	50	12	62
MSS	35	21	56
LSS	19	20	39
TOTAL	104	53	157

Chi Square = 11.458; df = 2; p = 0.0033

QUESTION 81: When you drink do you usually consume enough alcohol to become intoxicated?

	Yes	No	N
HSS	33	29	62
MSS	17	39	56
LSS	8	31	39
TOTAL	58	99	157

Chi Square = 12.619; df = 2; p = 0.0018

QUESTION 86: My drinking has steadily increased since coming to high school?

	Agree	Disagree	N
HSS	30	32	62
MSS	18	37	55
LSS	8	31	39
TOTAL	56	100	156

Chi Square = 8.455; df = 2; p = 0.0146

QUESTION 87: With whom do you usually drink?

a. A large social group.
b. Small group of friends.
c. Parents or other adults.
d. Girlfriend or boyfriend.
e. Alone.

	a	b	c	d	e	N
HSS	14	42	3	2	0	61
MSS	8	33	8	4	1	54
LSS	4	20	13	2	0	39
TOTAL	26	95	24	8	1	154

Chi Square = 18.826; df = 8; p = 0.0158

QUESTION 88: At some time during my years in high school, drinking has interferred with my preparation for class (studying, attendance, homework, exams, etc.).

	Agree	Disagree	N
HSS	16	45	61
MSS	13	42	55
LSS	1	37	39
TOTAL	30	124	155

Chi Square = 12.131; df = 2; p = 0.0164

QUESTION 89: If the use of drugs other than alcohol (such as marijuana, hashish, etc.) were declared legal would you probably:
a. Use alcohol only?
b. Use alcohol and other drugs?
c. Use other drugs only?
d. Use neither drugs nor alcohol?

	a	b	c	d	N
HSS	7	48	3	2	60
MSS	28	22	4	7	61
LSS	23	5	3	31	62
TOTAL	58	75	10	40	183

Chi Square = 86.183; df = 6; p = 0.0000

APPENDIX F

APPENDIX F

CHI SQUARE FOR HIGH, MODERATE AND LOW SENSATION SEEKING SUBGROUPS, AS DEFINED BY THE TAS SCALE OF THE SSS, AND SIGNIFICANTLY DIFFERENT QUESTIONS OF THE STUDENT ALCOHOL USE QUESTIONNAIRE

QUESTION 72: Do you drink beer, whiskey, wine or other alcoholic beverages?

	Yes	No	N
HSS	60	2	62
MSS	53	9	62
LSS	48	14	62
TOTAL	161	25	186

Chi Square = 10.074; df = 2; p = 0.0065

APPENDIX G

APPENDIX G

CHI SQUARE FOR HIGH, MODERATE, AND LOW SENSATION SEEKING SUBGROUPS AS DEFINED BY THE GEN SCALE OF THE SSS, AND SIGNIFICANTLY DIFFERENT RESPONSES TO THE STUDENT ALCOHOL USE QUESTIONNAIRE

QUESTION 72: Do you drink beer, whiskey, wine or other alcoholic beverages?

	Yes	No	N
HSS	62	0	62
MSS	52	10	62
LSS	46	16	62
TOTAL	160	26	186

Chi Square = 17.527; df = 2; p = 0.002

QUESTION 73: How often do you drink alcoholic beverages?

a. Less than once a month.
b. Once a month.
c. Twice a month.
d. Once a week.
e. More than once a week.

	a	b	c	d	e	N
HSS	7	8	16	25	6	62
MSS	8	5	14	15	10	52
LSS	15	5	16	10	1	47
TOTAL	30	18	46	50	17	161

Chi Square = 17.693; df = 8; p = 0.0236

QUESTION 76: Do you ever drink alone?

	Yes	No	N
HSS	23	39	62
MSS	10	42	52
LSS	9	38	47
TOTAL	42	119	161

Chi Square = 6.339; df = 2; p = 0.0420

QUESTION 85: The reduction of the legal age for the consumption of alcohol has resulted in my now drinking more openly than if it remained at 21.

	Agree	Disagree	N
HSS	47	15	47
MSS	37	15	52
LSS	25	22	47
TOTAL	109	52	161

Chi Square = 6.671; df = 2; p = 0.0356

QUESTION 88: At some time during my years in high school, drinking has interferred with my preparation for class (studying, attendance, homework, exams, etc.).

	Agree	Disagree	N
HSS	14	48	62
MSS	12	39	51
LSS	8	45	47
TOTAL	28	131	160

Chi Square = 10.213; df = 2; p = 0.0370

QUESTION 89: If the use of drugs other than alcohol (such as marijuana, hashish, etc.) were declared legal would you probably:
a. Use alcohol only?
b. Use alcohol and other drugs?
c. Use other drugs only?
d. Use neither drugs nor alcohol?

	a	b	c	d	N
HSS	15	38	4	5	62
MSS	19	28	3	10	60
LSS	31	11	2	17	61
TOTAL	65	77	9	32	183

Chi Square = 28.193; df = 6; p = 0.0001